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WESTERN DEVELOPMENT DIVISION

HEADQUARTERS AIR RESEARCH AND DEVELOPMENT COMMAND

POST OFFICE BOX 262 INGLEWOOD, CALIFORNIA

INTEROFFICE CORRESPONDENCE

Hallerman
117L
HTV
nose cone

TO: Colonel Terhune, WDT CC: Colonel Leonhard, WDI DATE:

SUBJECT: HADC Sled Track Requirements and Related Requirement for Relocating Existing Launch Stands

FROM: LtCol Jacobson, WDTT

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1. On 17 January 1956, WDD stated by TWX to Headquarters USAF the projected WDD requirements for track testing (see Incl 1 to this memo). These requirements called for:

a. 150 runs for inertial guidance component testing (tests are already scheduled for the SNORT track at NOTS.

b. 150 runs for ICBM guidance and nose cone component testing at velocities of 2,500 ft/second for one to two seconds, accelerations of 5-15G and decelerations from 10-16G.

c. 100-150 runs for IRBM development.

d. Unspecified number of test runs for the WS-117L Program.

2. To date the following tests have been identified, planned and/or conducted in support of WDD projects:

a. 150 run for inertial guidance component testing (to date, 12 runs of this series have been made at NOTS).

b. 15-20 test runs for impact fuze testing on GE nose cone on Sandia track. Testing is to take place during the period February to December 1957.

c. 15-20 test runs for impact fuze testing on AVCO nose cone on Sandia track; tests to be conducted in 1957.

d. 10-20 test runs for Bell Telephone Lab guidance components environmental testing; to be complete by April 1957. Track to be used is unknown at this time.

e. 10-20 test runs for AVCO stable platform (nose cone) testing; to be completed during the period April to July 1957. Track to be used is unknown at this time.

f. Testing of WS-117L components. At present, approximately 50 test runs have been identified. Testing is to start in November 1957. Track to be used is unknown at this time but due to the expected requirement of high velocities for several seconds, the HADC track is indicated.

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g. 10 test runs for the North American Aviation engine structural integrity tests at 10-15 G acceleration are proposed. Tests to be run in late 1956 and early 1957. AFFTC track would be used. Requirements for this series of tests are now being reviewed.

3. The originally stated requirements for sled testing made in January 1956 are proving firm in that of the original estimate of 450 sled test runs, 280 runs already have been identified. Additional runs are expected to be identified as the program progresses. Among these already being considered are:

a. A second series of tests for GE, AVCO and Sandia. These tests will total approximately 30 runs.

b. Advanced systems test for inertial guidance sub-systems. These tests would total at least 50 runs.

4. The recent progress of the NOTS test runs indicates that sled testing will prove satisfactory for inertial guidance components. There is an indication that drift measurements will be available at accuracies commensurate with velocity measurements. If such proves to be the case, additional inertial component test runs will be programmed.

5. The extension of the HADC track has cut across the missile test range in such a fashion as to divide the launch complexes from the impact areas. Missiles therefore must overfly the track. Considering all types of missiles, the average number of launchings per month is approximately 21. This includes MATADOR, X-7B's, Q-4's, HTV's and the air-to-air rockets. Inclosure 2 summarizes the HADC position on relocation of these facilities. The cost involved is that required for relocation of the instrumentation facilities. This is, in essence, the complete Holloman test range. (Colonel Leonhard, WDI, is preparing a memo this date for General Schriever summarizing the background on the planning for relocation for this area).

6. Simultaneous operation of the sled track and the launch complex is not considered practical for several reasons. Among these are:

a. The entire sled track area must be evacuated during missile launchings as missiles overflying the track would endanger personnel working on the track. Proper scheduling could eliminate this danger to personnel but would result in greatly increased costs of operation for both the missile launch range and the track.

b. Missiles scheduled to overfly the track present definite hazards to the track and the related facilities. On 26 July 1956, HTV Launching Flight W-2 terminated approximately 150 yards from the new track. When the track is completed, each rail will be a pre-stressed continuous beam of 35,000 feet, stretched 12 feet longer than normal in order to keep it under continuous tension. Hits on or near the track would require repair and the estimated cost of re-stressing the track is $900,000.

7. From the above, it appears that relocation of the existing HADC instrumentation for ground and air launch missiles is necessary in order to insure uninterrupted operations of both the track and test facility. This relocation will result in savings of funds to the Air Force.

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RICHARD K. JACOBSON
Lt Colonel, USAF
Chief, Test Group

2 Incl
1. Cy TWX WDTT-1-8-C-E, 17 Jan 56
2. Cy ARDC ltr w/1st Ind, 26 Apr 56, subj: Resiting of Missile Launch Area